

Attorney Docket No. SABI-30145 (STC-03-0008)
Application No. 10/675,780
Amendment and Response

Remarks

Claims 1-21 are pending in the application. Claims 4, 5, 14, 15 and 17 have been amended. Replacement paragraphs 0016 and 0018 have also been added.

I. Correction of Informalities

Applicants have amended the specification to correct certain errors in paragraph 0016. Specifically, Applicants are amending Equations 2 and 3 of paragraph 0016 to correct typographical errors by including brackets where brackets surrounding the "T_i-T_o" portion of the equations were mistakenly left out.

Additionally, Applicants have used the expressions "hydrocarbon" and/or "HC" throughout the application to encompass the alkylation feed of the aromatic compound and alkylating agent used in the alkylation reaction, or in the case of toluene methylation, the feed of toluene and methanol. Applicants have amended paragraph 0030 of the specification to further clarify this.

II. Rejections Under 35 U.S.C. §112

The Examiner has rejected claims 4, 5 and 14-17 under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Examiner has objected to the recitation "HC" feed. Applicants have amended claims 4, 5, 14, 15 and 17 to delete this reference to "HC" and to specifically refer to toluene and methanol. Applicants submit this should remove any indefiniteness with respect to these claims. Accordingly, the rejection under 35 U.S.C. §112, second paragraph, should be withdrawn.

III. Rejections Under 35 U.S.C. §103

The Examiner has rejected pending claims 1-21 as being obvious under 35 U.S.C. §103(a), based upon the reference Brown et al. (U.S. Patent No. 6,504,072).

In the Examiner's rejection, the Examiner states the following:

The instantly claimed process involves the methylation of toluene with methanol to produce para-xylene in the presence [of] a P-ZSM-5.

Attorney Docket No. SABI-30145 (STC-03-0008)
Application No. 10/675,780
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Brown et al. discloses a process that employs the same catalyst being used by applicants. The process takes place at 600°C, with a molar ratio of cofed hydrogen of 2. The WHSV of 4 is on the order of the LHSV claimed herein. The toluene:methanol ratio is 2. See particularly examples 1-9.

The only substantive difference the instantly claimed process and that of Brown et al. is that the instant claims recite "conditions that provide substantially no structural aluminum loss". The examiner considers that the reaction conditions of the two references overlap considerably and are drawn toward making the same product. Accordingly, by carrying out the reaction at recited conditions, patentees would have achieved no structural aluminum loss inherently.

Applicants submit that the Brown et al. reference cited and relied on by the Examiner fails to provide a *prima facie* case of obviousness of the presently pending claims. In order to establish a *prima facie* case of obviousness, the prior art references must teach or suggest *all of the claim limitations* when combined. See *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974); and MPEP 2143.03 (*Emphasis added*).

Brown et al. requires the use of ZSM-5 zeolite that has undergone an "unusually severe steaming" (col. 2, lines 10-17). This severe steaming is achieved by steaming the zeolite at a temperature of at least about 950°C or higher (col. 4, lines 1, etc.). The examples 1-9 cited by the Examiner refer to a steaming temperature of at least 950°C. As described in Brown et al., this severe steaming has a drastic effect on the zeolite catalyst by significantly reducing the micropore volume of the catalyst and which is critical for carrying out the process of the invention (col. 3, lines 54-67). Further, all the examples of Brown et al. of toluene methylation utilize this severely steamed zeolite catalysts in the toluene methylation reaction.

Applicants submit that Brown et al. fails as in establishing a *prima facie* case of obviousness because not all of Applicants' claim limitations are met. Specifically, Brown et al. fails to disclose a *non-steamed*, phosphorus-treated ZSM-5 zeolite catalyst used. For this reason alone, Applicants submit that the rejections under 35 U.S.C. §103 should be withdrawn.

Attorney Docket No. SABI-30145 (STC-03-0008)
Application No. 10/675,780
Amendment and Response

IV. Provisional Double Patenting Rejection

The Examiner has also rejected pending claims 1-21 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of copending U.S. Application No. 10/632,254.

Applicants submit that the present claims are patentable over the claims of the '254 application. Nowhere in the claims of the '254 patent is there any water cofeed introduced into a reactor during any methylation reaction under conditions that provide substantially no structural aluminum loss of the catalyst from such introduction of water. The addition of this water cofeed is claimed and discussed throughout the present application's specification.

Accordingly, the provisional rejection based on the judicially created doctrine of obviousness-type double patenting is improper and should be withdrawn.

V. Conclusion

In view of all of the reasons presented above, Applicant submits that the application is in a condition for allowance. Favorable action is therefore respectfully requested.

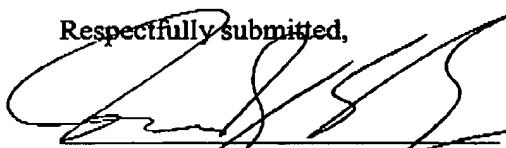
No extension fees are believed necessary for this response. This response is being submitted within three months from the date of the office action. If any extension of time is believed necessary, however, such extension is hereby requested. If any fees are deemed necessary for the continued prosecution of the present application, the Commissioner is hereby authorized to charge them to Deposit Account No. 50-1899.

Attorney Docket No. SABI-30145 (STC-03-0008)
Application No. 10/675,780
Amendment and Response

Please contact the undersigned at the address or telephone number listed below
should there be any questions, or if contacting the undersigned would expedite or aid the
examination or prosecution of this application.

Date: June 10, 2005

Respectfully submitted,



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